

REMARKS

Claims 57-72 are pending in this application. Claim 57 is currently amended. Claim 67 is cancelled. No new matter has been added.

The drawings stand objected to as requiring a legend identifying the FIG. 1 drawing as "Prior Art." New FIG. 1 drawings including a legend identifying the drawing as "Prior Art" are submitted, accordingly withdrawal of the objection is requested.

Claim 67 is objected to as being a substantial duplicate of Claim 61. Claim 67 has been cancelled, accordingly the objection is moot.

Claims 57 and 58 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Japanese Patent 11-68192 ("JP'192"), U.S. Patent No. 4,420,365 to Lehrer ("Lehrer"), and U.S. Patent No. 4,256,816 to Dunkleberger ("Dunkleberger"). The rejection is respectfully traversed.

As amended, claim 57 recites, *inter alia*, "forming a first magnetic layer; forming a first nonmagnetic layer in contact with said first magnetic layer; removing a portion of said first nonmagnetic layer to form an opening which exposes a portion of said first magnetic layer; forming a tunnel barrier layer within said opening in contact with said first magnetic layer; and forming a second magnetic layer over and in contact with said tunnel barrier layer." The combination of JP'192, Lehrer, and Dunkleberger fails to disclose, teach or suggest at least these limitations.

Amended claim 57 defines a method comprising, *inter alia*, "forming a tunnel barrier layer within said opening in contact with said first magnetic layer; and forming a second magnetic layer over and in contact with said tunnel barrier layer." By contrast

JP'192 discloses forming a first tunnel barrier layer 310 above and in contact with a first magnetic layer 210, depositing ferromagnetic particles 110 on top of the first tunnel barrier layer 310, forming a second tunnel barrier layer 311 over the ferromagnetic particles 110, and forming a second magnetic layer 211 above and in contact with the second tunnel barrier layer 311. Particularly, the second magnetic layer 211 is not formed over and in contact with a tunnel barrier layer that is in turn formed over and in contact with the first magnetic layer 210. In other words, in JP'192 the second magnetic layer 211 is not formed in contact with the first tunnel barrier layer 310. JP'192 therefore fails to disclose a fabrication method which includes the steps of "forming a tunnel barrier layer within said opening in contact with said first magnetic layer; and forming a second magnetic layer over and in contact with said tunnel barrier layer." Dunkleberger and Lehrer are both unrelated to magnetic tunnel junction technology and were both cited for the purpose of showing conventional techniques of removal of a portion of a layer. Neither reference cures the noted deficiency of JP'192.

Accordingly, withdrawal of the rejection is respectfully requested.

Claims 59-61, 63-69, and 71-72 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of JP'192, Lehrer, and Dunkleberger in further view of U.S. Patent No. 6,181,537 to Gill. The rejection is respectfully traversed.

Claims 59-61, 63-69, and 71-72 depend from claim 57 and contain the limitations of claim 57 stated above. Gill is cited in the Office Action for the purposes of showing a tunnel junction layer having a magnetic layer that is a pinned layer, and for showing the comparative thickness of the tunnel barrier layer and the free (second magnetic) layer. Gill does not disclose "forming a tunnel barrier layer within said opening in contact with said first magnetic layer; and forming a second magnetic layer over and in contact with said tunnel barrier layer" and therefore does not cure the

deficiencies of JP'192 described above. Accordingly withdrawal of the rejection is respectfully requested.

Claim 62 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of JP'192, Lehrer, and Dunkleberger in further view of U.S. Patent No. 5,201,995 to Reisman et al. ("Reisman"). The rejection is respectfully traversed.

Claim 62 depends from claim 57 and contain the limitations of claim 57 stated above. Applicant submits that Reisman is an improper reference for a §103 rejection. Reisman is related to a process for selective deposition of solid phase materials and is unrelated to magnetic tunnel junction technology. Reisman does indeed describe a "first nonmagnetic layer," however, any invention that is unrelated to magnetic tunnel junction technology but comprises layers of any sort will include a "first nonmagnetic layer." There is no suggestion in Reisman nor any identified in JP'192, Lehrer, or Dunkleberger that would lead one of ordinary skill in the art to combine these references together. Even if Reisman is held to be a proper reference for a §103 rejection, being unrelated to magnetic tunnel junction technology, it still fails to cure the deficiencies of JP'192 as described above. Accordingly, withdrawal of the rejection is respectfully requested.

Claim 70 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of JP'192, Lehrer, Dunkelberger, and Gill, and further in view of U.S. Patent No. 6,452,764 to Abraham et al. ("Abraham"). The rejection is respectfully traversed.

Claim 70 depends from claim 57 and contain the limitations of claim 57 stated above. Abraham is cited for the purpose of showing a tunnel barrier layer having a different shape from the free layer. Abraham does not disclose "forming a tunnel

Application No. 10/759,078
Amendment dated October 19, 2006
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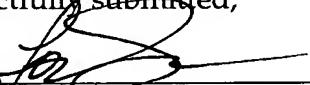
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barrier layer within said opening in contact with said first magnetic layer; and forming a second magnetic layer over and in contact with said tunnel barrier layer" and therefore does not cure the deficiencies of JP'192 described above. Accordingly withdrawal of the rejection is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: October 19, 2006

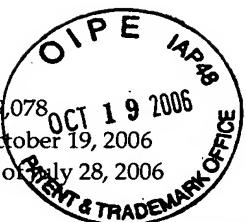
Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS

New Figure 1 is being added including a legend identifying the drawing as "Prior Art." No new matter is being added.